

WHAT IS CLAIMED IS:

1. An image formation apparatus comprising:

a photoreceptor;

5 a charger having a charging member for charging the photoreceptor;

a latent image write unit for writing an electrostatic latent image onto the photoreceptor charged by the charger; and

10 a developing device having a developer support including a magnetic field production member, the developing device for rendering visible the electrostatic latent image written by the latent image write unit with a developer,

15 wherein the charging member of the charger is disposed under effect of a magnetic field produced by the magnetic field production member of the developing device; and

the charging member is made of a nonmagnetic material.

2. The image formation apparatus according to claim 20 1, wherein the charging member is made of a nonmagnetic material having magnetic permeability of 1.05 or less.

3. The image formation apparatus according to claim 25 1, wherein the charging member is made of a nonmagnetic material comprising SUS303 added copper.

4. The image formation apparatus according to claim 1, wherein the charging member comprises a sponge-like conductive elastic body on a nonmagnetic shaft thereof.

5

5. The image formation apparatus according to claim 1, wherein an outer periphery of the conductive elastic body is coated with a cylindrical film.

10

6. The image formation apparatus according to claim 1, wherein the charging member comprises a nonmagnetic shaft having 600 N/mm<sup>2</sup> or more in the tensile strength.

15

7. The image formation apparatus according to claim 1, wherein the developer support of the developing device rotates at the number of revolutions to such an extent that a part of the developer scatters against a magnetic force produced by the magnetic ~~field~~ <sup>field</sup> production member.

20

8. The image formation apparatus according to claim 1, wherein the magnetic ~~field~~ <sup>field</sup> production member of the developing device has a developing magnetic pole set to 100 mT or more; and

an adjacent magnetic pole set to 50 mT or more is disposed at a part adjacent to the developing magnetic pole.

9. An image formation apparatus according claim 1,  
wherein a charger further comprises a removal member  
disposed in contact with the photoreceptor in the upstream of  
the charging member, the removal member for removing a deposit  
5 on the photoreceptor;

the removal member is disposed under the effect of a  
magnetic field produced by the magnetic field production member  
of the developing device; and

10 the removal member is made of a magnetic material.

10. The image formation apparatus according to claim  
9, wherein the removal member is provided with a brush-like  
member on a magnetic shaft thereof.

15 11. The image formation apparatus according to claim  
9, wherein the removal member comprises a magnetic shaft made  
of SUM.

20 12. The image formation apparatus according to claim  
9, wherein the removal member comprises a magnetic shaft made  
of SUM having a surface plated with nickel.

25 13. The image formation apparatus according to claim  
9, wherein the removal member is provided with a brush-like

member by bonding a fiber-like member onto a magnetic shaft.

14. The image formation apparatus according to claim  
9, wherein a predetermined removal bias is applied to the  
5 removal member.

15. The image formation apparatus according to claim  
9, wherein bias for holding an opposite-polarity toner and a  
removal bias for transferring the held opposite-polarity toner  
10 to the photoreceptor are applied to the removal member.

16. The image formation apparatus according to claim  
1,

wherein a plurality of the photoreceptors, a plurality  
15 of the chargers, and a plurality of the developing devices are  
disposed in a vertical direction;

any one of the chargers is disposed at an intermediate  
position between the developing devices positioned  
consecutively up and down; and

20 the charging member of the charger is positioned  
approximately below a developing part of the upper developing  
device.

17. The image formation apparatus according to claim  
25 1,

wherein a plurality of the photoreceptors, a plurality of the chargers, and a plurality of the developing devices are disposed in a vertical direction;

any one of the chargers is disposed at an intermediate position between the developing devices positioned consecutively up and down; and

the charging member of the charger is disposed under the effect of the magnetic field produced by the magnetic field production member of each of the developing devices positioned consecutively up and down.

18. The image formation apparatus according to claim 9,

wherein a plurality of the photoreceptors, a plurality of the chargers, and a plurality of the developing devices are disposed in a vertical direction;

any one of the chargers is disposed at an intermediate position between the developing devices positioned consecutively up and down; and

the removal member of the charger is positioned approximately below a developing part of the upper developing device.

19. The image formation apparatus according to claim 9,

wherein a plurality of the photoreceptors, a plurality of the chargers, and a plurality of the developing devices are disposed in a vertical direction;

any one of the chargers is disposed at an intermediate  
5 position between the developing devices positioned consecutively up and down; and

the removal member of the charger is disposed under the effect of the magnetic field produced by the magnetic field production member of each of the developing devices positioned  
10 consecutively up and down.

20. An image formation apparatus comprising:

a photoreceptor;

a charger having a charging member for charging the  
15 photoreceptor, a removal member disposed in contact with the photoreceptor in the upstream of the charging member, the removal member for removing a deposit on the photoreceptor, and a partition member for partitioning the charging member and the removal member and causing a removed substance peeled  
20 off from the removal member to collide therewith;

a latent image write unit for writing an electrostatic latent image onto the photoreceptor charged by the charger;  
and

a developing device having a developer support including  
25 a magnetic field production member, the developing device for

rendering visible the electrostatic latent image written by the latent image write unit with a developer.

21. The image formation apparatus according to claim  
5 20, wherein the partition member is placed out of contact with the photoreceptor.

22. The image formation apparatus according to claim  
10 20, wherein the partition member extends to below a line connecting rotation centers of the charging member and the removal member.

23. The image formation apparatus according to claim  
15 20, wherein the partition member is placed out of contact with the removal member.

24. The image formation apparatus according to claim  
20 20, wherein a suction bias having the same polarity as a charge bias applied to the charging member is applied to the partition member.

25. The image formation apparatus according to claim  
25 20, wherein the partition member is disposed under the effect of a magnetic field produced by the magnetic field production member of the developing device; and

the partition member is made of a magnetic material.

26. The image formation apparatus according to claim  
20, wherein the charging member, the removal member, and the  
5 partition member are positioned and supported on a common  
support frame and are assembled through the support frame into  
a main unit of the apparatus in one piece.

27. The image formation apparatus according to claim  
10 20,

wherein a plurality of the photoreceptors, a plurality  
of the chargers, and a plurality of the developing devices are  
disposed in a vertical direction;

any one of the chargers is disposed at an intermediate  
15 position between the developing devices positioned  
consecutively up and down; and

the charging member of the charger is positioned  
approximately below a developing part of the upper developing  
device.

20

28. An image formation apparatus comprising:

An image formation apparatus comprising:

a photoreceptor;

a charger having a charging member for charging the  
25 photoreceptor;



a latent image write unit for writing an electrostatic latent image onto the photoreceptor charged by the charger; and

a developing device having a developer support including  
5 a magnetic field production member, the developing device for rendering visible the electrostatic latent image written by the latent image write unit with a developer,

wherein the charging member of the charger is coated at least on an outermost peripheral surface with a cylindrical  
10 surface layer film formed of a polymeric material; and

a material of the surface layer film has a Young's modulus of 0.6 GPa or less.

29. The image formation apparatus according to claim  
15 28, wherein the material of the surface layer film is a thermoplastic polyester elastomer.

30. The image formation apparatus according to claim  
20 28, wherein the charging member comprises a sponge-like conductive elastic body on a support shaft thereof; and

the conductive elastic body is coated on an outer periphery with the cylindrical surface layer film.

31. The image formation apparatus according to claim  
25 30, wherein the sponge-like conductive elastic body of the

charging member is a conductive urethane foam.

32. The image formation apparatus according to claim 28, wherein the surface layer film of the charging member has  
5 a resistance value in a range of  $10^6 \Omega/\square$  to  $10^{8.5} \Omega/\square$ .

33 The image formation apparatus according to claim 28, wherein the charging member has Asker F hardness of 90 degrees or less.